DOCUMENT RESUME

ED 341 902 CG 023 997

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TITLE The Nebraska Tobacco Education Curriculum: Year 2 Evaluation. Prevention Center Papers. Technical Report No. 15.
INSTITUTION Nebraska Univ., Lincoln. Nebraska Prevention Center for Alcohol and Drug Abuse.
SPONS AGENCY Health Education, Inc.; Nebraska State Dept. of Health, Lincoln.
PUB DATE Jan 87
NOTE 34p.; For related documents, see CG 023 998-CG 024 000.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Health Education; Junior High Schools; Junior High School Students; *Prevention; Program Effectiveness; *Smoking; Substance Abuse; Tobacco
IDENTIFIERS *Nebraska

ABSTRACT

In 1983 the Nebraska Prevention Center for Alcohol and Drug Abuse began a project to develop and evaluate an educational program designed to discourage young people from taking up the smoking habit and to encourage those who smoke to quit. The second evaluation of this smoking curriculum had two components: a 1-year follow-up evaluation of the curriculum based on an assessment of smoking attitudes, knowledge, and behavior of the students taught in the first year of this project; and an evaluation of the effectiveness of a slightly revised version of the curriculum taught to a different group of classes in the second year of the project. Subjects included 736 students at the 1-year followup. This longitudinal project presents significant encouragement to those involved in tobacco education. With 1 day of inservice and a well-prepared curriculum, a typical teacher can effect significant knowledge increases in students. This project showed that when teachers do present an educational program, well-grounded in theory, that long-term effects are visible as much as a year later. These long-term effects include an increase in self-reported ability by young people to resist pressures to smoke, a reduction in the number of people who think they will smoke in the future, and a reduction in the expected rate of smoking behavior. (LLL)

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ED341902

Prevention Center Papers

Technical Report No. 15

The Nebraska Tobacco Education Curriculum: Year 2 Evaluation

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NEBRASKA PREVENTION CENTER FOR ALCOHOL AND DRUG ABUSE

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THE NEBRASKA TOBACCO EDUCATION CURRICULUM:

YEAR 2 EVALUATION

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Prevention Center Papers

Technical Report No. 15

January 1987

The work upon which this report is based was funded by the Nebraska Department of Health with additional support from the University of Nebraska-Lincoln School of Health, Physical Education and Recreation and Health Education, Inc.

FOREWORD

The Prevention Center Papers are an occasional publication of the Nebraska Prevention Center for Alcohol and Drug Abuse. Their purpose is to make available information related to alcohol and drug abuse prevention programs that would not otherwise be easily accessible.

The work described in this report, Technical Report No. 15, was funded by a grant from the Nebraska Department of Health and supported by the University of Nebraska-Lincoln School of Health, Physical Education and Recreation (a division of Teachers College) and Health Education, Inc.

The Prevention Center Papers should be considered working documents and do not reflect the official policy or position of the Prevention Center, the University of Nebraska, the Department of Health, or Health Education, Inc.

Prevention Center Papers are produced for a limited readership to stimulate discussion and generate a flow of communication between the Prevention Center and those interested in the broad field of substance abuse prevention.

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THE NEBRASKA TOBACCO EDUCATION CURRICULUM:

YEAR 2 EVALUATION

TECHNICAL REPORT NO. 15

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THE NEBRASKA TOBACCO EDUCATION CURRICULUM:

YEAR 2 EVALUATION

Introduction

One life-long smoker in every three dies prematurely from smoking-related illnesses, usually after a sustained, expensive and disabling period of illness. Most people in this country who smoke wish they didn't. People who quit are glad they did. Most smokers say they would quit if they could. The consequences of smoking, in a significant proportion of the population, is addiction.

The health consequences of smoking are clear. Because it is so difficult for smokers to quit, the greatest public health gain in reducing the cost of cigarette smoking is by reducing the likelihood that young people will take up the habit.

In 1983 the Nebraska Prevention Center for Alcohol and Drug Abuse (NPCADA) began a project to develop and evaluate an educational program designed to discourage young people from taking up the smoking habit and to encourage those who do smoke to quit.

This report is the second of two that describe the development, revision and evaluation of the Nebraska Tobacco Education Curriculum. An earlier prevention center paper (Technical Report No. 12, The Reduction of Adolescent Cigarette Smoking Through Educational Immunization) describes the background of this project and the results of the first year's evaluation of this curriculum.

The second evaluation of this smoking curriculum had two components: 1) a one-year follow-up evaluation of the curriculum based on an assessment of smoking attitudes, knowledge and behavior of the students taught in the first year of this project and 2) an evaluation of the effectiveness of a slightly revised version of the curriculum taught to a different group of classes in the second year of the project.

A Brief Summary of the First Year Findings

In a pre-post, control-experimental group comparison, data from the first year showed that the experimental group made significant gains in learning.

The first year evaluation also showed the curriculum was more effective when taught on 6-7 consecutive days than when taught once a week for 6-7 weeks.

Students who were taught by the curriculum failed to show significant gains in their perceptions of their ability to say no.

At both the pretest and the posttest, most of the students reported that they "could" say no without difficulty. The **likelihood** that they "would" actually say no in certain situations was significantly greater for students who received instruction from the curriculum.

Nonsmoking students who received instruction from the curriculum on consecutive days showed significantly greater intentions to remain nonsmokers than did nonsmoking students who received the curriculum one day a week for 6-7 weeks and the

nonsmoking students in the control group.

Results also showed that for the experimental group the magnitude of the change in smokers' intentions to quit was greater (and statistically significant) compared to the changes in nonsmokers' intentions to remain nonsmokers.

The pre-post, control-experimental group design has some significant limitations and does not account for such variables as the interaction of the testing experience with the curriculum. But in light of the limited resources for evaluation and the need to assess impact, albeit in a limited fashion, this design was judged appropriate.

Year 2 Evaluation: Follow-up of Year 1 Classes

This section focuses on the follow-up measures of the students who participated in the first year of the curriculum evaluation. A full description of the rationale for the curriculum and its development and the smoking characteristics of the population upon which it was tested are included in Technical Report No. 12, "The Reduction of Adolescent Cigarette Smoking Through Educational Immunization."

Evaluation Design

The design called for the impact of the curriculum to be assessed by means of a repeated measures ANOVA procedure. All student measures were made by paper and pencil test administered prior to being taught from the curriculum (1984), six to seven weeks

after the completion of the curriculum, and finally in the spring of 1985, approximately a year after the first posttest in Year 1. Evaluation team staff carried out all evaluation activities, not classroom teachers.

Unit of Analysis

The unit of analysis in this study was the class mean, not the individual student's score. The class mean was originally chosen as the unit of analysis because each class tends to act as a unit due to the interaction of students and the existence of friendship groups and cliques. The use of the class mean rather than individual student scores resulted in a considerably lowered N, making the overall analysis more conservative, lending credibility to any significant findings.

To generate discussion and increase the richness of this report, data were also analyzed in the more traditional approach, considering each subject as an individual unit for analysis. The rationale for analysis of classes as units because of their characteristic social interaction is reasonable, but by the time the follow-up data were collected students were no longer in intact groups and therefore the need for analysis of data by class was less clear.

We realized that this conservative approach to analysis increased the risk of overlooking important program outcomes, but we are also concerned that using the traditional approach of considering each student a separate unit of analysis and therefore

significaptly inflating the N created the possibility of statistical significance that had no practical value.

Subject Attrition

Between the first year's evaluation efforts in 1984 and the subsequent one-year follow-up in the spring of 1985, there was a significant subject loss. The total N was reduced from 1,215 students to 736, and the class N from 48 to 40. This loss of subjects was a direct result of problems in tracking students, arranging for students who were no longer in intact classes to be tested, absenteeism, and the loss of students to schools in which the study was not being conducted.

Method of Analysis

Scores were based on items that measured student knowledge of the physiological consequences of smoking, ways to act assertively and resist pressures to smoke, ways to break habits and recognition of influences that encourage smoking. These scores were analyzed using a repeated measures ANOVA. The reliability coefficient (internal consistency) of the measuring instrument was .72. Because the measuring instrument did not contain sufficient items to derive reliable subscales for each of the four areas of emphasis in the curriculum, we chose to look at specific items to determine curriculum effectiveness in areas thought to be especially important.

The follow-up classes fall into three groups:

Experimental-I: received all instruction on 6-7 consecutive days during a two-week period

Experimental-II: received instruction 1 to 2 times each week for 6-7 weeks

The control group: traditional school programs continued.

Knowledge Effects

The means and standard deviations for the pretest, posttest and follow-up test knowledge scores of the three groups are shown in Table 1. Four classes from a single school from the Experimental-I group were omitted from the analysis because the teacher did not follow the curriculum as prescribed.

Results from the repeated measures ANOVA are shown in Table 2. The within factor interaction of time and curriculum which measures the change between pretest, posttest and follow-up tests for all three groups (E-I, E-II, and C) was not significant ($F = 1.47$, $p < .22$). This indicates that across the year the earlier increases in knowledge observed in the experimental groups diminished. Changes in knowledge were no different for students in the experimental and control groups after one year.

Comparison of this analysis with the earlier analysis of only pre- and posttest scores suggests that the non-significant result may not arise from the simple decay of effects across the year but from the nature of the final control group classes. The control group classes assessed in the one-year follow-up test, as a group, achieved higher

TABLE 1

Means and Standard Deviations for Aggregate Knowledge Scores by Experimental Condition Between 1984 and 1985

	Experimental-I		Experimental-II		Control	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Pretest	18.08	1.45	18.51	1.56	18.52	1.98
Posttest	20.49	2.17	20.05	2.08	19.55	1.53
Follow-up	19.89	2.27	19.67	1.95	20.28	1.27
	N = 13		N = 17		N = 10	

TABLE 2

Repeated Measures Analysis For Effects of Curriculum on Aggregated Knowledge Scores between 1984 and 1985

Source	df	MS	F	prob
Between:				
Condition (C)	2	.067	.01	.99
Error	38	7.15		
Within:				
Time (T)	2	34.69	22.07	.00
Time by Condition (TxC)	4	2.31	1.47	.22
Error	76	1.57		

gains between the pre- and posttests than did the original larger control group. Examination of the means of the classes from schools which could not participate in the follow-up study showed that these classes were in fact the ones who had the lowest gains between the original pre- and posttest. **This important change in the nature of the control group should also be noted in interpretting all of the follow-up results.**

The more standard statistical analysis of **individual** knowledge score gains showed a significant difference in knowledge gains. Students who received the curriculum in compact form (Exp-I) retained their knowledge about smoking over the year as compared to the Exp-II group (who recieved the curriculum once a week for 6-7 weeks) or the students who didn't receive the curriculum ($p < .0003$). The means and standard deviations for individual knowledge scores are shown in Table 3. The repeated measure analysis of individual knowledge scores is shown in Table 4.

Behavior Effects

The second effect of the curriculum analyzed was its impact on current smoking behavior. For this assessment a score of 1 indicated a non-smoker, 2 an experimental smoker, and 3 a regular smoker (more than a pack every week). As shown in Table 5, the change in smoking status over the year for the three groups does not appear to be significant according to strenuous statistical standards (alpha < .06).

Despite the fact that this measure did not reach statistical significance, this result nevertheless should be considered noteworthy

TABLE 3

Means and Standard Deviations for Individual Knowledge Scores by Experimental Condition between 1984 and 1985

	Experimental-I		Experimental-II		Control	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Pretest ('84)	18.51	3.43	18.48	3.83	19.04	3.27
Posttest ('84)	20.98	4.25	19.87	4.67	19.96	3.78
Follow-up Test ('85)	20.56	5.39	19.33	5.10	20.69	5.98
	N = 275		N = 233		N = 228	

TABLE 4

Repeated Measures ANOVA For Effects of Curriculum on Individual Knowledge Scores between 1984-85

Source	dF	MS	F	prob.
Between:				
Condition (C)	2	132.69	3.55	.03
Error	733	37.33		
Within:				
Time (T)	2	588.11	50.62	.0000
T x C	4	61.31	5.28	.0003
Error	1466	11.62		

for several reasons: 1) the classes in the control group began with a smoking rate considerably higher than either of the two experimental groups (Table 6), yet this rate rose approximately twice as much as that for the Experimental-I group; 2) aggregate analysis is a stringent analysis and yet the alpha approached significance (.06); 3) the control group students who made the least gain in knowledge between the pre- and posttest were missing from this analysis; and 4) as shown in Table 7 analysis of the data using individual student scores showed a highly significant difference in the change in smoking status across time (alpha < .000).

A simple review of the rate of change in the number of nonsmokers in each group helps bring to life the meaning of these data and of this study. Defining a nonsmoker as a student who reported smoking only one cigarette or less, and reviewing the rate of expected decline in the proportion of nonsmokers in each experimental group provides an interesting point of view of these data. Table 8 shows the changes in percent of nonsmokers between the pretest, posttest and follow-up test for each of the three groups in the evaluation.

We would expect the number of nonsmokers in a cohort of this age to decline over time as more students take up smoking. Of significance is the much smaller decline in the two experimental groups compared to the control group and the relative difference in the rate of decline of nonsmoking between the Experimental-I group and the Experimental-II group. In other words it appears the curriculum slowed the rate of decline in the number of nonsmokers; or stated another way, the curriculum slowed the rate at which young people were beginning to

TABLE 5

Repeated Measures Analysis for Effects of Curriculum on Aggregated Smoking Behavior Scores Between 1984-85

Source	dF	MS	F	prob.
Between:				
Condition (C)	2	11.28	3.05	.06
Error	38	3.70		
Within:				
Time (T)	2	5.59	59.90	.000
T x C	4	.21	2.28	.06
Error	76	.09		

TABLE 6

Means and Standard Deviations for Individual Smoking Behavior Scores by Experimental Condition Between 1984 and 1985

	Experimental-I		Experimental-II		Control	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Pretest ('84)	2.04	1.59	2.10	1.68	2.57	2.01
Posttest ('84)	2.09	1.61	2.47	1.97	2.77	2.18
Follow-up Test ('85)	2.44	1.92	3.03	2.43	3.51	2.55
	N = 275		N = 232		N = 228	

TABLE 7

Repeated Measures ANOVA for Effects of Curriculum on Individual Smoking Behavior Scores Between 1984-85

Source	dF	MS	F	prob.
Between:				
Condition (C)	2	108.76	10.80	.000
Error	732	10.07		
Within:				
Time (T)	2	111.92	115.08	.000
T x C	4	6.55	6.73	.000
Error	1464	.97		

TABLE 8

Percent Nonsmokers by Experimental Condition Between 1984 and 1985

	Experimental-I	Experimental-II	Control
	%	%	%
Pretest (84)	84.6	81.2	76.9
Posttest (84)	83.7	78.1	75.2
Follow-up (85)	77.3	67.1	58.3
Difference	7.3	14.1	18.6

smoke. The Experimental-I group received the educational program on consecutive days while the Experimental-II group received the curriculum spread out over 6-7 weeks, one or two days a week. The analysis of the pre-post data reported in Technical Report No. 12 suggested the consecutive days of instruction (Exp-I condition) to be the most effective, and these long-term data appear to confirm this conclusion.

Intention To Smoke

The third effect assessed was the curriculum's effect on intentions to smoke in the future. Intentions to smoke were measured on a scale in which a 1 indicated the strongest commitment to be a nonsmoker and 5 indicates a strong intention to be a smoker.

The effect of the curriculum on intentions to smoke was very similar to the effect on actual smoking behavior. As shown in Table 9 the results of the repeated measures analysis on aggregated intention scores revealed no significant differences between the groups, although the alpha in this case also approached significance (.06). The means for the groups (Table 10) seem to suggest at least that the intentions of the Exp-I group remained somewhat more stable than those of either the Exp-II group or control group. As with the effects on actual smoking, the analysis of the individual intention scores encourage optimistic interpretations.

Table 11 shows the results of a repeated measures analysis of individual intention scores (alpha < .0003) and Table 12 shows the means and standard deviations.

TABLE 9

Repeated Measures Analysis for Effects of Curriculum on Aggregated Intention to Smoke Scores Between 1984 and 1985

Source	df	MS	F	prob.
Between:				
Condition (C)	2	.34	1.54	.23
Error	35	.22		
Within:				
Time (T)	2	.13	4.54	.01
T x C	4	.06	2.29	.06
Error	70	.03		

TABLE 10

Means and Standard Deviations for Aggregate Intention to Smoke Scores by Experimental Condition Between 1984 and 1985

	Experimental-I		Experimental-II		Control	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Pretest ('84)	1.57	.22	1.64	.41	1.59	.33
Posttest ('84)	1.44	.27	1.60	.27	1.61	.33
Follow-up Test ('85)	1.48	.28	1.80	.34	1.71	.19
	N = 13		N = 17		N = 10	

TABLE 11

Repeated Measures Analysis for Effects of Curriculum on Individual Intention to Smoke Scores Between 1984 and 1985

Source	df	MS	F	prob
Between:				
Condition (C)	2	3.67	2.25	.11
Error	733	1.63		
Within:				
Time (T)	2	2.71	9.39	.0001
T x C	4	1.16	4.02	.0003
Error	1466	.29		

TABLE 12

Means and Standard Deviations for Individual Intention to Smoke Scores by Experimental Condition Between 1984 and 1985

	Experimental-I		Experimental-II		Control	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Pretest ('84)	1.55	.82	1.55	.84	1.56	.85
Posttest ('84)	1.42	.73	1.52	.81	1.56	.90
Follow-up Test ('85)	1.46	.78	1.69	.97	1.71	1.02
	N = 275		N = 232		N = 228	

It is not the intent of this summary report to explore in detail the elements of this evaluation. However, the impact of this curriculum can be further illustrated by a digression into the follow-up data. The earlier report (Technical Report No. 12 "Reduction of Adolescent Cigarette Smoking Through Educational Immunization") suggested that the impact of the curriculum on intentions may have been stronger on smokers, i.e. encouraging quitting, than on the nonsmokers, i.e. encouraging them to remain nonsmokers.

Following this finding into the follow-up data described in this report provides an opportunity to see how the curriculum effects developed over time, which is what we would expect from a curriculum grounded in the concept of persuasive communication and social learning theory. In this evaluation of intentions to quit smoking, long-term effects can be seen by sampling the actual percent of smokers who had not smoked a cigarette in six months or more at the time of the pretest with the percent who had not smoked a cigarette for six months or more at the time of the one-year follow-up. The underlying theory of this curriculum and the pre-post intention scores would suggest that smokers in the experimental group would be more likely to quit with time than smokers in the control group. This indeed appeared to happen. Table 13 shows the percent of smokers who had not smoked in the last six months in the two experimental group and the control group.

The percent of "nonactive" smokers (possibly "quitters") increased more in the experimental groups than the control group and increased more in the Experimental-I group (instruction on consecutive days) than in the Experimental-II group (intermittent instruction).

TABLE 13

Percentage of Smokers Who Had Not Smoked Cigarettes in the Last Six Months Prior to the Test

	Experimental-I	Experimental-II	Control
	%	%	%
Pretest	9.8	13.3	36.2
Posttest	49.0	44.8	34.5
Follow-up Test	50.0	38.8	29.0

TABLE 14

Percentage of Students Who Would ("Probably/Definitely") Refuse To Go Along With Best Friend's Dare to Smoke a Cigarette

	Experimental-I	Experimental-II	Control
	%	%	%
Pretest	72.9	75.1	74.9
Posttest	72.9	66.8	73.3
Follow-up Test	71.0	64.3	62.7

Another way to view intentions is to assess the skills taught by the curriculum to help students carry out their intentions. Several questions explored this area. The analysis of one of these questions is reported here. Table 14 shows responses to the question "If your best friend dared you to smoke a cigarette, what would you do?" The five possible responses were: 1) definitely smoke it; 2) probably smoke it; 3) I don't know what I'd do; 4) probably refuse it; 5) definitely refuse it. While it is not possible to assess to what degree stated intentions relate to actual behavior, it is assumed that stated intentions to do something are a good indicator of that behavior occurring. Table 14 suggests that 71% of Experimental-I students said they would definitely or probably refuse an offer of a cigarette by their best friend; 62.7% of the Control group said they would definitely or probably refuse such an offer.

Other Substances

Not a principal focus of this study, but an interesting sidelight, is the suggested impact of the curriculum on the use of other substances. The evaluation instrument asked students if they had ever smoked anything besides tobacco. The same question was asked at the pretest, posttest and follow-up assessment. No statistical analysis is reported here, only descriptive data. While the percent of respondents reporting smoking something other than tobacco is small and varies from group to group, it is interesting to note the changes between the pretest and follow-up test in the two experimental groups compared to the control group. No claim is made that the curriculum had a

carry-over effect to other drugs (namely marijuana) although the data suggest this possibility (Table 15).

TABLE 15

Percentage of Students Reporting Smoking Anything Besides Tobacco

	Experimental-I	Experimental-II	Control
	%	%	%
Pretest	7.4	4.8	8.8
Posttest	6.5	10.4	10.2
Follow-Up Test	13.2	13.7	20.8
Difference	5.8	8.9	12.0

Year 2 Evaluation: Revised Version of the Curriculum

Based on the first year's evaluation data and detailed feedback from the teachers who taught this curriculum, the curriculum was subsequently revised and a new cohort of teachers recruited to continue to expand the use of the curriulum. The revised curriculum was evaluated over a two-month period. Five junior high schools in Lincoln and five schools in the surrounding area participated in the evaluation of the revised curriculum. Schools were randomly assigned to the experimental group (for which the curriculum was implemented in its consecutive-day form) and the control group (which received only traditional curriculum materials). All students received both pre- and posttests with the groups being tested approximately one week prior to implementation of the curriculum and two weeks after its completion.

Repeated measures aggregated and individual analyses were again used to assess the effects of the revised curriculum on knowledge, intentions to smoke in the future, and self-report smoking behavior.

Smokeless Tobacco

The evaluation instrument for the evaluation of the revised curriculum differed from that used in the long-term (one-year follow-up) evaluation described earlier in this report, and included questions on the use of chewing tobacco and snuff. While not central to this report, it is interesting and timely to note that 26% of the nonsmokers and 65% of the smokers had tried chewing

tobacco or snuff at least once. Since 25% of the junior students have smoked cigarettes, this means that more than half of these junior high students had tried either cigarettes or snuff/chewing tobacco one or more times. Materials on chewing tobacco and snuff were included in the revised curriculum for this reason.

Knowledge Effects

The aggregated analyses (Table 16) showed a highly significant effect for the curriculum on knowledge ($p < .0000$). The difference between the means of the experimental and control classes for this analysis was approximately 2.3 standard deviations (Table 17). This difference between the means indicates a very successful curriculum.

Behavior Effects

Differences between pre- and posttest scores for self-reported smoking behavior were not expected to appear in the short time between the pre- and posttest. An aggregate analysis of the effects of the curriculum on self-reported smoking behavior (Table 18) similarly showed no significant impact for the curriculum at this time (alpha = .33), although the individual analysis (Table 19) did offer some encouragement (alpha = .06). The means and standard deviation for aggregate scores are shown in Table 20. Table 21 shows the means and standard deviation for individual scores.

It should be reiterated that changes in actual smoking behavior were not expected to occur rapidly (between a pre- and posttest) with a curriculum based on the theory of educational immunization.

TABLE 16

Repeated Measures Analysis of Effects of Curriculum on Aggregated Knowledge Scores of Revised Curriculum

Source	df	MS	F	prob.
Between:				
Condition (C)	1	29.25	14.99	.0003
Error	59	1.95		
Within:				
Time (T)	1	27.65	78.33	.0000
T x C	1	31.78	90.05	.0000
Error	59	.35		

TABLE 17

Means and Standard Deviations for Aggregated Knowledge Scores by Experimental Condition for the Revised Curriculum

	Experimental		Control	
	$\bar{X}$	SD	$\bar{X}$	SD
Pretest	11.25	.67	11.29	1.42
Posttest	13.27	.89	11.22	1.38
	N = 37		N = 24	

TABLE 18

Results of Repeated Measures Analysis of Effects of Curriculum on Aggregated Self-Reported Smoking Behavior Scores of Revised Curriculum

Source	df	MS	F	prob.
Between:				
Condition (C)	1	173.54	2.03	.16
Error	59	85.34		
Within:				
Time (T)	1	128.56	26.26	.000
T x C	1	4.62	.95	.33
Error	59	4.89		

TABLE 19

Results of Repeated Measures Analysis of Effects of Curriculum on Individual Self-Reported Smoking Behavior Scores for Revised Curriculum

Source	df	MS	F	prob.
Between:				
Condition (C)	1	17.34	2.53	.11
Error	1235	6.84		
Within:				
Time (T)	1	29.45	31.92	.000
T x C	1	3.22	3.49	.06
Error	1235	.92		

TABLE 20

Means and Standard Deviations for Aggregated Self-Reported Smoking Behavior Scores by Experimental Condition for Revised Curriculum

	Experimental		Control	
	$\bar{X}$	SD	$\bar{X}$	SD
Pretest	1.95	.43	2.15	.89
Posttest	2.12	.52	2.40	.89
	N = 37		N = 24	

TABLE 21

Means and Standard Deviations for Individual Self-Reported Smoking Behavior Scores by Experimental Condition for Revised Curriculum

	Experimental		Control	
	$\bar{X}$	SD	$\bar{X}$	SD
Pretest	2.02	1.75	2.11	2.03
Posttest	2.17	1.83	2.41	2.33
	N = 705		N = 532	

If the curriculum was effective, a change in smoking behavior over a year's time, for example, should occur. This was found to be true in the follow-up measures for the curriculum in its original form. It is usually expected that the first variable to change in any curriulum project is knowledge, and knowledge scores did change dramatically as a result of this curriculum. No funds were available to complete the long-term follow-up measures on the cohort of students taught by the revised curriculum.

Intentions To Smoke

Immediate differences between pre- and posttest for scores for intentions to smoke were not expected for this short time span. The aggregate analyses (Tables 22 and 23) indicated little change in the classroom groups (alpha = .37), but the analysis of individual scores (Table 24) did suggest an increase in intentions not to smoke in the future for the group who received this curriculum (alpha = .06).

TABLE 22

Repeated Measures Analysis of Effects of Curriculum on Aggregated Intention to Smoke Scores by Experimental Condition for Revised Curriculum

Source	df	MS	F	prob.
Between:				
Condition (C)	1	.761	.5	.482
Error	59	1.523		
Within:				
Time (T)	1	1.475	11.19	.001
T x C	1	.109	.82	.367
Error	59	.132		

TABLE 23

Means and Standard Deviations for Aggregate Intention to Smoke Scores by Experimental Condition for Revised Curriculum

	Experimental		Control	
	$\bar{X}$	SD	$\bar{X}$	SD
Pretest	12.63	.98	12.73	.78
Posttest	12.34	1.04	12.56	.89
	N = 37		N = 24	

TABLE 24

Repeated Measures Analysis of Effects of Curriculum on Individual Intention to Smoke Scores by Experimental Condition for Revised Curriculum

Source	df	MS	F	prob.
Between:				
Condition (C)	1	37.03	4.04	.045
Error	1231	9.16		
Within:				
Time (T)	1	46.59	20.41	.000
T x C	1	7.90	3.46	.06
Error	1231	2.28		

Summary

This longitudinal project presents significant encouragement to those involved in tobacco education. Recognizing that teachers who work in this area often do not consider this their prime responsibility or principal joy and that schools devote very little time to this topic, it is encouraging to note that with one day of inservice and a well-prepared curriculum a typical teacher can effect significant knowledge increases in his or her students. This project showed that when teachers do present an educational program, well-grounded in theory, that long-term effects are visible as much as a year later. These long-term effects include an increase in self-reported ability by young people to resist pressures to smoke, a reduction in the number of people who think they will smoke in the future, and a reduction in the expected rate of smoking behavior.

OTHER PREVENTION CENTER PAPERS

Technical Reports

Adolescent Tobacco Use in Nebraska (1980)
Adult Tobacco Use in Nebraska (1980)
Evaluation as a Part of Primary Prevention Programming: The Indian Youth Project
Alcohol and Drug Treatment Counselors' Involvement in Prevention Activities
Adolescent Alcohol, Marijuana, and Tobacco Use in Nebraska (1982)
Adolescent Substance Use in Nebraska (1982)
Developing Nebraska's Drug and Alcohol Curriculum
Developing Community Support for Alcohol and Drug Education: A Case Study of Development in a Small Community
Perceived Acceptability and Effectiveness of Selected Strategies to Reduce Alcohol Abuse
Adult Tobacco Use In Nebraska 1980-1983
Changing Public Perceptions of the Seriousness of Alcohol and Drug Abuse
Reduction of Adolescent Cigarette Smoking Through Educational Immunization
Adult Tobacco Use in Nebraska 1980-1985
Teaching Students to Resist Pressures to Drink and Drive: First Year Evaluation

Program Reports

Steve Glenn on Prevention
4-H Junior Leader Alcohol Education Project
Decisions About Alcohol and Other Drugs: Teacher Trainer Manual
Drug Abuse Prevention through Leisure and Recreation
Drug and Alcohol Education: Model Programs
Prevention Program Evaluation: A Primer

Curricula

Decisions About Alcohol and Other Drugs: A Curriculum for Nebraska Junior High School Students--Teachers Guide
Resisting Pressures to Drink and Drive (To be used with the videotape series "Resisting Pressures to Drink and Drive")--Teachers Guide
Nebraska Smoking and Tobacco Education Curriculum (To be used with the videotapes "Immediate Physiological Effects of Cigarette Smoking" and "Tobacco...No!")--Teachers Guide

All of these papers are available from the Nebraska Prevention Center for Alcohol and Drug Abuse, Coliseum, Room 226, University of Nebraska, Lincoln, NE 68588-0136.